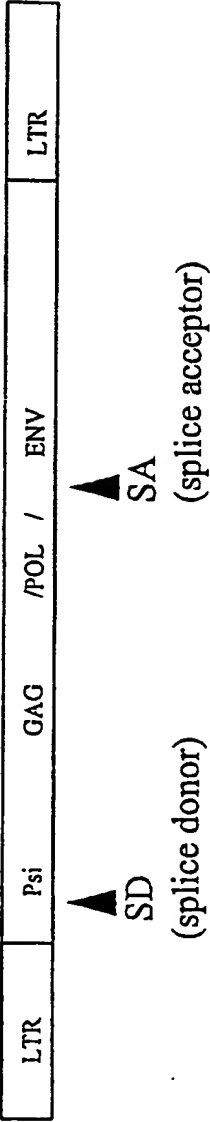


Figure 1



Kpn1
overhang

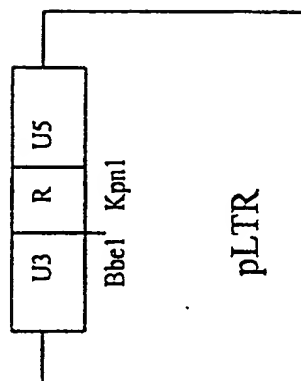
Bbe1
overhang

Splice donor
(underlined)

Start of MLVR
(in italics)

CGTTAACACTAGTAAGCTTGCTCTAAGGTAATAGTCGACAGGCCCTCGGCCAGTCTCTCCGATTGACTGAGTCGCCCGGGTAC
CGCGGCAATTGTGATCATTCGAACGAGATTCCATTATCAGCTGTTCGGACGCGGGTCAGGAGGCTAACTGACTCAGCGGGCCCC

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Figure 3

5' - GATCTAACCTAGGCTCTGAGTGTCTTAAACACTGGGCTTGCGAGACAGAGAAGACTCTTGGCTTCTGATAGGCACCTATTGGTCTTACTGACATCCACTTTGGCTTCTCTCCACAGGTGAGG
ATTGGATCCAGAGCTCACAATTGTGACCCGACAGCTCTGTCTCTGAGAACGCAAGACTATCCGTGGATACCAATGACTGTAGGTGAACGGAAGAGAGGTGTCCACTCC

Branch point

SA

BamHI

StuI

LTR PSI SV40 Neo LTR

pL-SA-N

Scal

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Figure 4

GT TO GC CHANGE

3' -GGTGGCCCTCCGTTCCGACCGGTCGTTGATATAGACACAGACAGGCTAACAGATCACAGATACAACTACGCCGACGACATGATCAATCGATT-5'

SpeI

AscI

5' -CCCTCACTCGGCGGCCAGTCTTCGA-3'

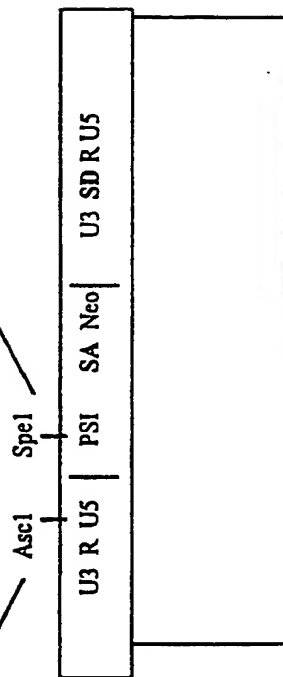
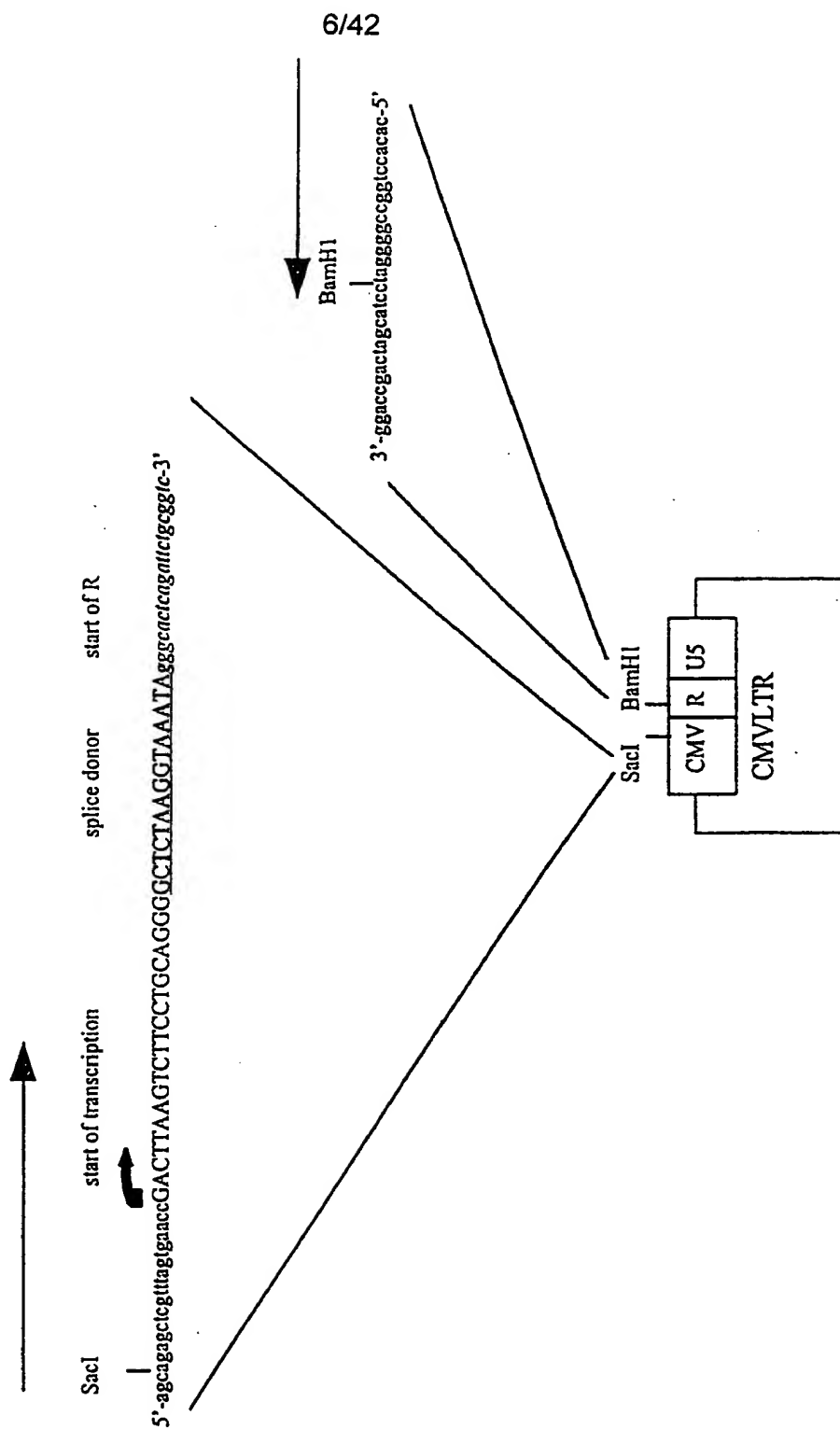


Figure 5

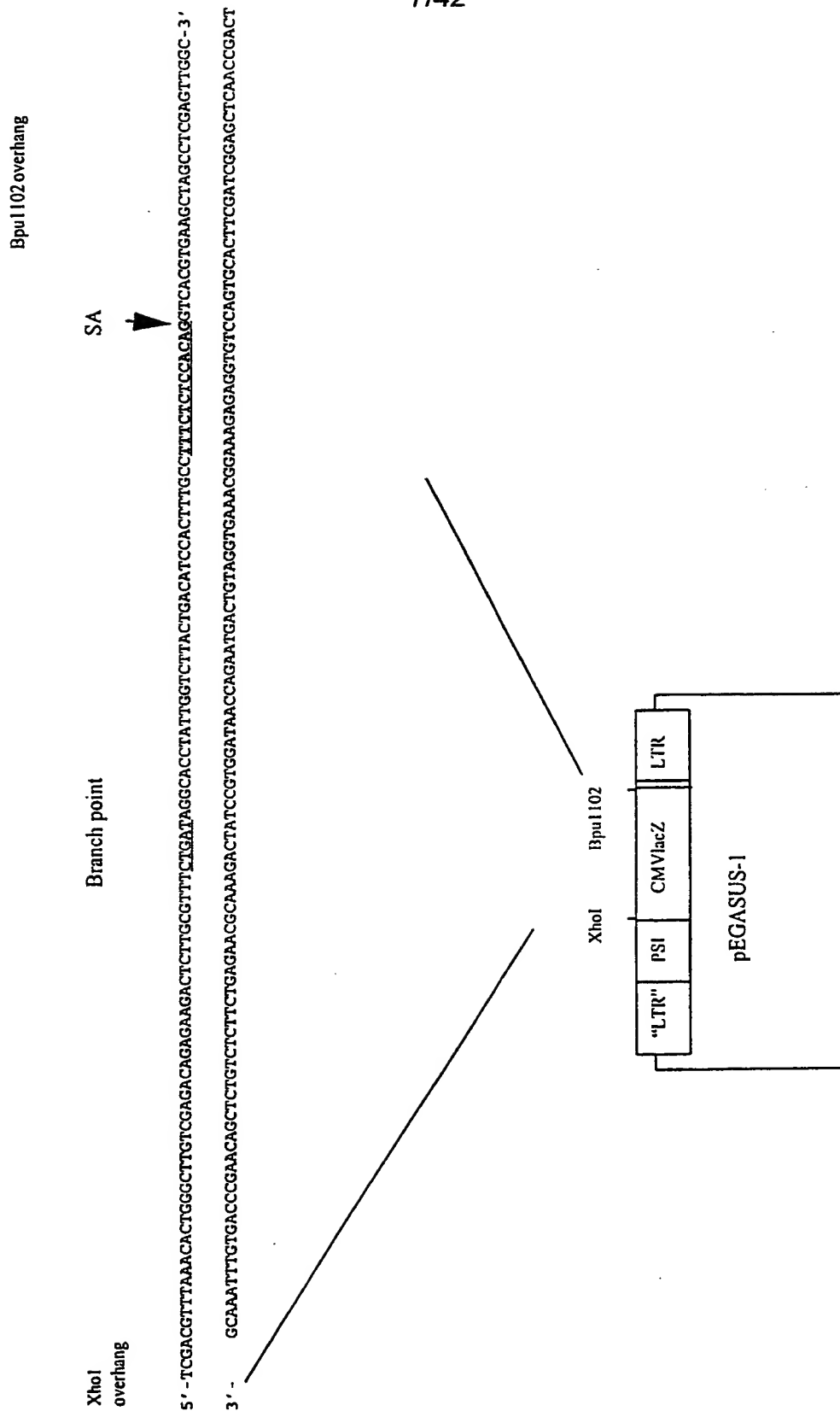
CAA

Figure 6



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Figure 7



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Figure 8

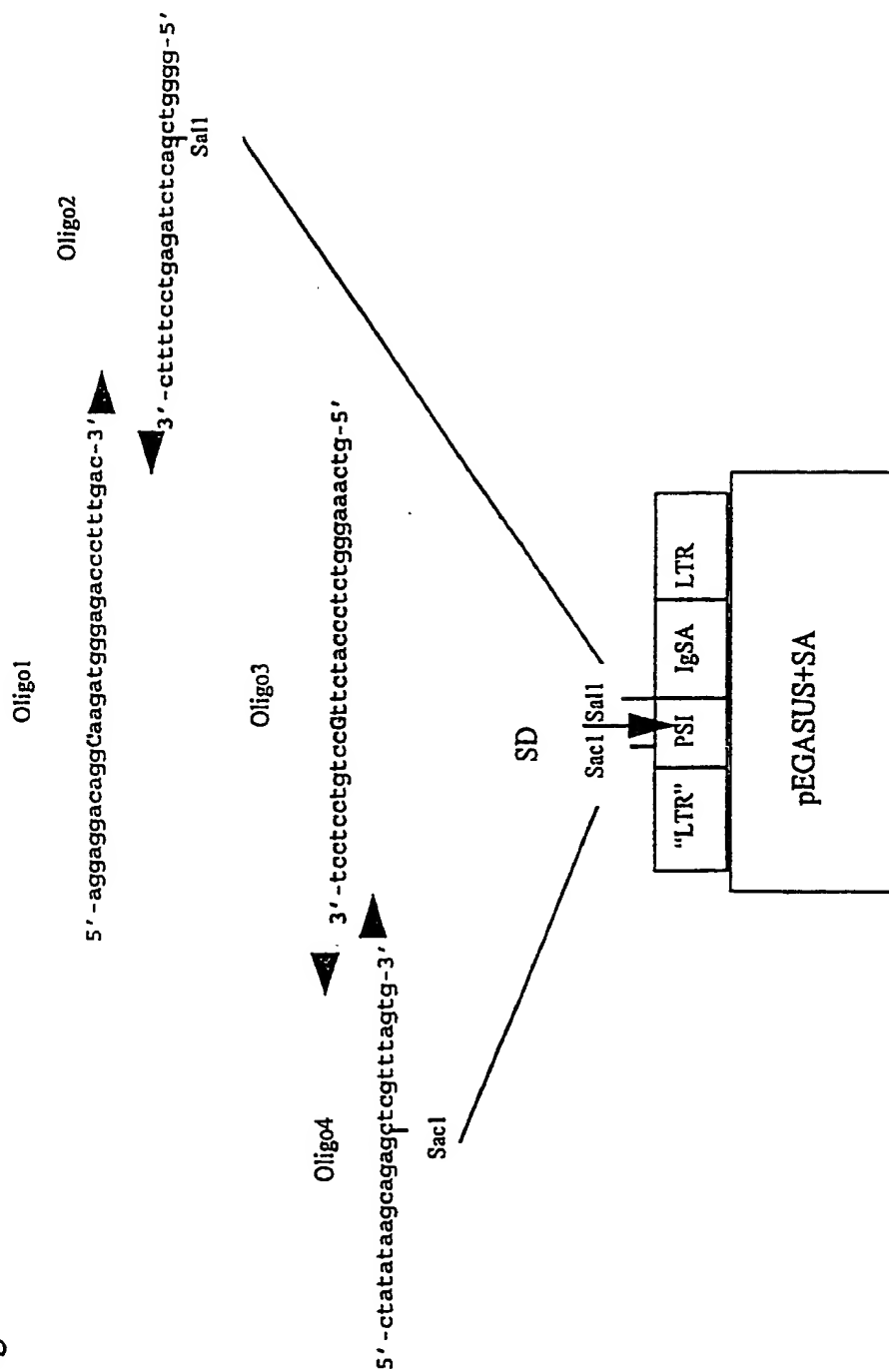


Figure 9

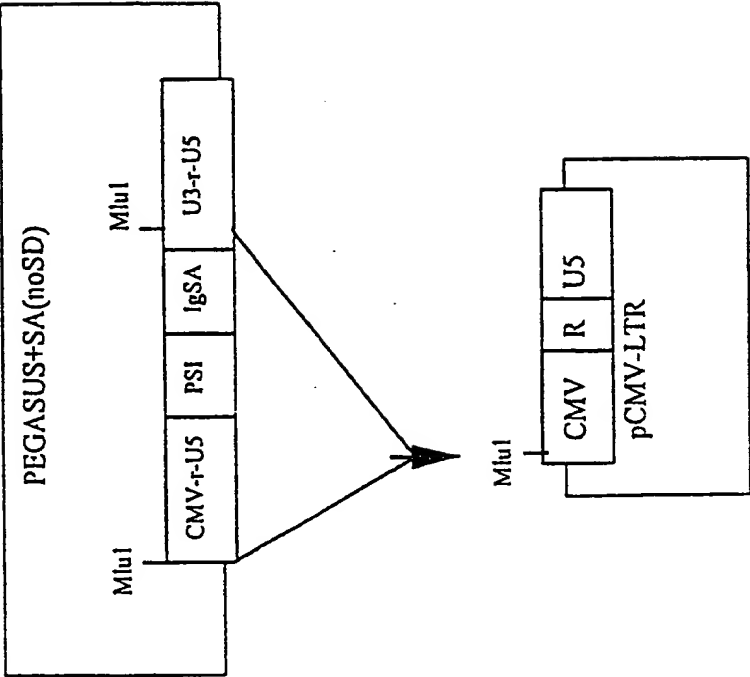


Figure 10

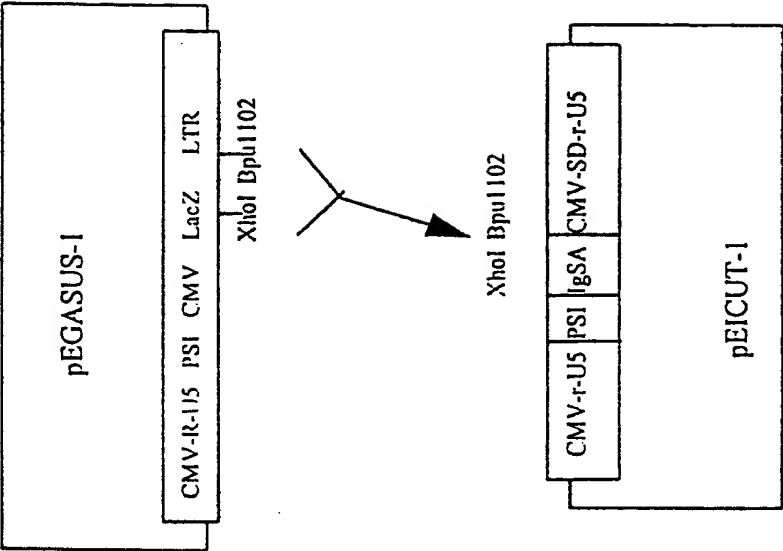


Figure 11

Figure 11 continued

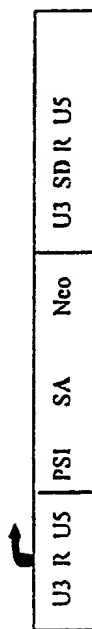
[illegible]

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Figure 12

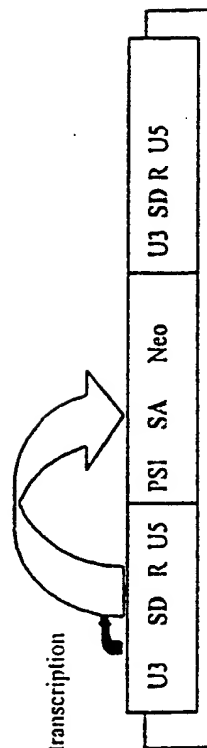
(A) pICUT vector in transfected cells

start of transcription



(B) pICUT vector in transduced cells

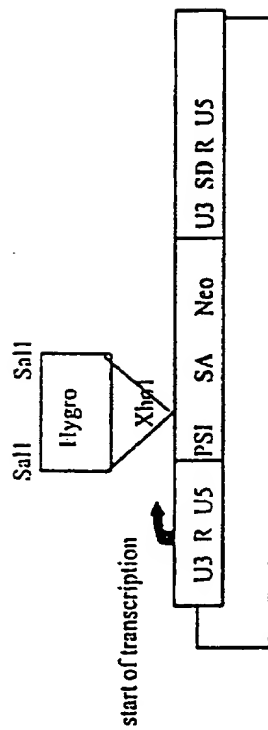
start of transcription



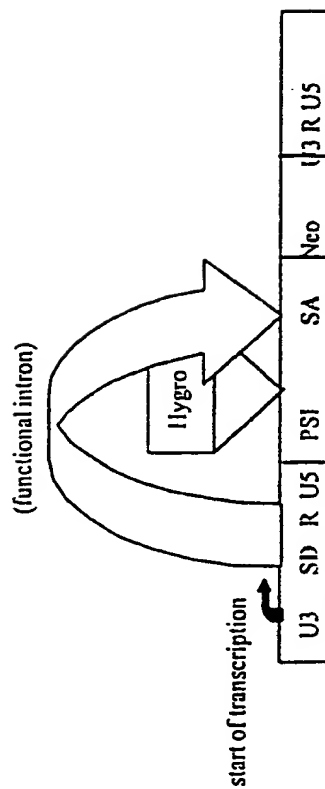
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Figure 13

(a) Vector configuration in transfected cells

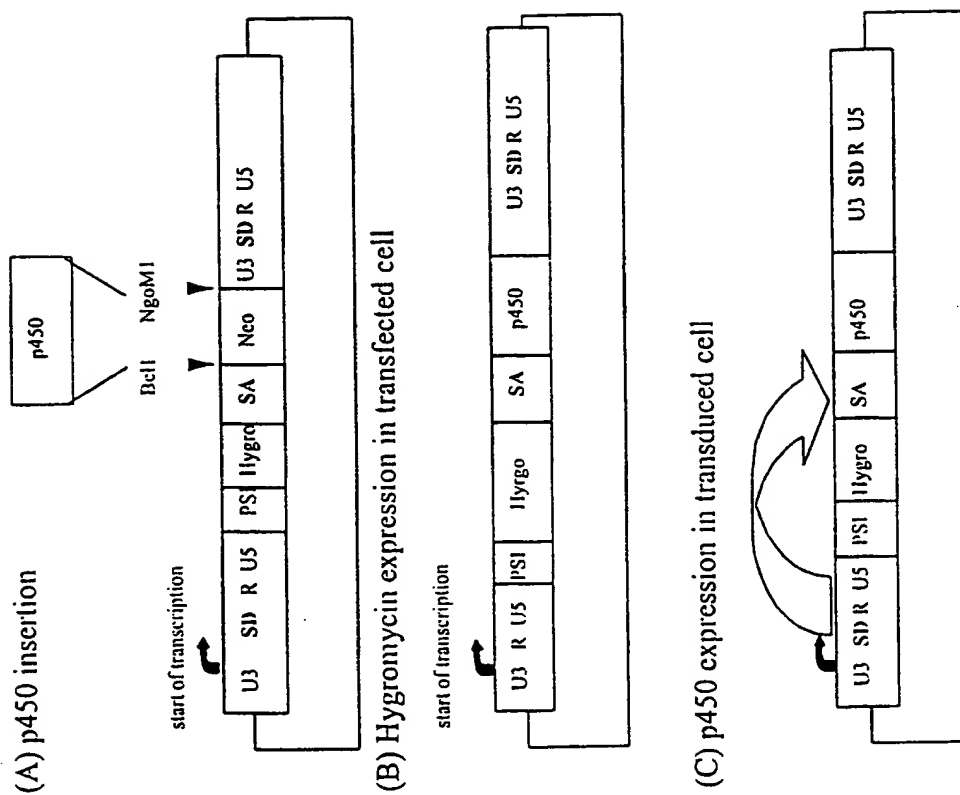


(B) Vector configuration in transduced cells



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Figure 14



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Figure 15

3'end of pol 5'-ATG CGT TCA ACG CTC TCA AAA CCC CTT AAA AAT AAG
5'altered 4070A 5'-ATG GCC AGA AGC ACC CTG AGC AAG CCA CCC CAG GAC

GTT AAC CCG CGA GGC CCC CTA ATC CCC-3'
AAA AAT CCC TGG AAA CCT CTG ATC GTC-3'

Figure 16

ATGGCCAGAA GCACCTGTAG CAAGCCACCC CAGGACAAA TCAATCCCTG GAAACCTCTG
ATCCTCATGG GAGTCCTGTT AGGAGTAGGG ATGGCAGAGA GCCCCCATC AGGTC
TTTAAATGTAA CCTGGAGAGT CACCAACCTG
ATGACTGGG GTACCGGCAA TGCCACCTCC CTCCTGGGAA CTGTACAGA TGCCTTCCCA
AAATTATATT TTGATCTATG TGATCTGGTC GGAGAGGAGT GGGACCTTC AGACCAGGAA
CCGTATGTCG GGTATGGCTG CAAGTACCCC GCAGGGAGAC AGCGACCCG GACTTTTGAC
TTTACGTGT GCCCTGGCA TACCGTAAG TCGGGGTGT GGGACCCAGG AGAGGGCTAC
TGTTGTAAT GGGGTGTGA AACCCCGGA CAGGCTTACT GGAAGCCAC ATCATCGTGG
GACCTAATCT CCCTTAAGG CGGTAACACC CCTGGGACA CGGGATGCTC TAAAGTTGCC
TGTGGCCCT GCTACGACCT CTCCTAAGTA TCCAATTCCT TCCAGGGGC TACTCGAGGG
GGCAGATGCA ACCCTCTAGT CCTAGAATTC ACTGATGCAG GAAAAAGGC TAACTGGGAC
GGGCCCAAT CGTGGGACT GAGACTGTAC CGGACAGGAA CAGATCCTAT TACCATGTTT
TCCCTGACCC GGCAGGTCTT TAATGTGGA CCCCAGTCC CCATAGGGCC CAACCCAGTA
TTACCCGACC AAAGACTCCC TTCTCACCA ATAGAGATTG TACCGGCTCC ACAGCCACCT
AGCCCCCTCA ATACCAGTTA CCCCCCTCC ACTACCAGTA CACCCTCAAC CTCCTCTACA
AGTCCAAGT TCCACAGCC ACCCCAGGA ACTGGAGATA GACTACTAGC TCTAGTCAAA
GGAGCCTATC AGCGCTTAA CCTCACCAAT CCCGACAGA CCAAGAATG TTGGCTGTGC
TTAGTGTGCG GACTCTCTTA TTACGAAGGA GTAGCGGTG AGTTACCTT ATCTGAAGTG
TCCACCGTC CGGCCACTG TACGGCCACT TCCCAACATA ACCAGGCTT ATGTAACACC
ACAGGACAGG GCCTATGCAT GGGGCGAGTA CTTAAACTC CCGCGGAAC AATGTGGGT
ACCCAAAGG CCGGTCAGG ATCTACTAC CTTCAGCAC CCGCGGAAC AATGTGGGT
TGCAGCACTG GATTGACTCC CTGCTGTGTC ACCACGGTG TCAATCTAAC CACAGATTAT
TGTGTATTAG TTGAACCTG GCCCAGAGTA ATTTACCCT CCCCCGATTA TATGTATGGT
CAGCTTGAAC AGGTACCAA ATATAAAGA GAGCCAGTAT CATTGACCTT GGGCTTCTA
CTAGGAGGAT TAACCATGG AGGATGCA GCTGGAATAG GGACGGGAC CACTGCCTTA
ATTAAACCC AGCAGTTTGA GCAGCTCAT GCCGCTATCC AGACAGACCT CAAGGAAGTC
GAAAAGTCAA TTACCAACCT AGAAAGTCA CTGACCTCGT TGTCTGAAGT AGTCTACAG
AACCGCAGG GCCTAGATT GTATTCTTA AAGGAGGGAG GTCTCTGCG AGCCCTAAA
GAAGAATGTT GTTTTATGC AGACACACG GGGCTAGTGA GAGACAGCAT GGCCAAATTA
AGAGAAGGC TTATCAGAG ACANAACTA TTGAGACAG GCCAAGGATG GTTCGAAGGG
CTGTTTAATA GATCCCCCTG GTTTACCACC TTAATCTCCA CCATCTGGG ACCTCTAATA
GTACTCTTAC TGATCTTACT CTTTGGACCT TGCATTCTCA ATCGATTGGT CCAATTTGTT
AAAGACAGGA TCTCAGTGGT CCAGGCTCTG GTTTTGACTC AGCAATATC CCAGCTAAA
CCCATAGAGT ACAGGCCATG A

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Figure 17

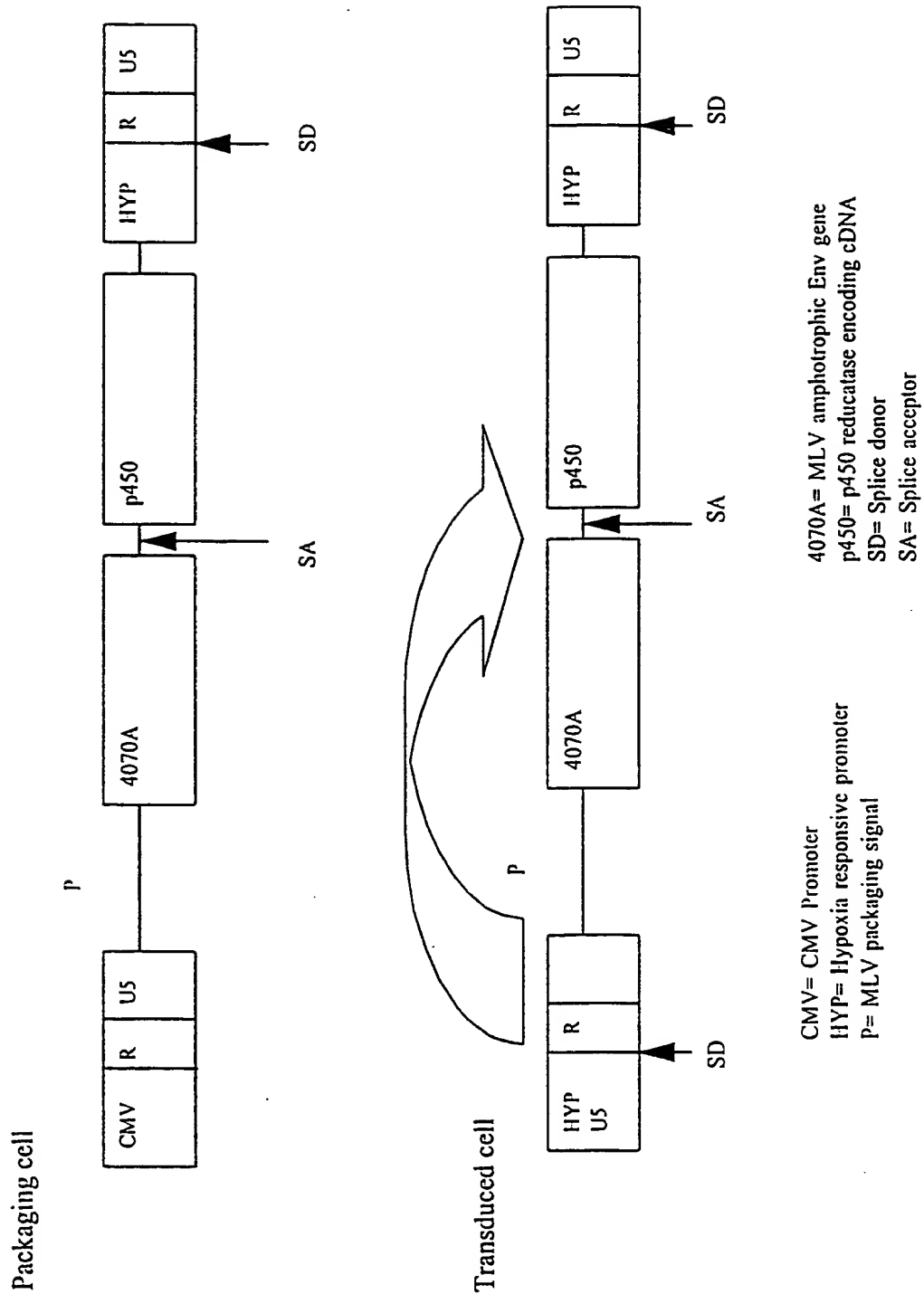


Figure 18

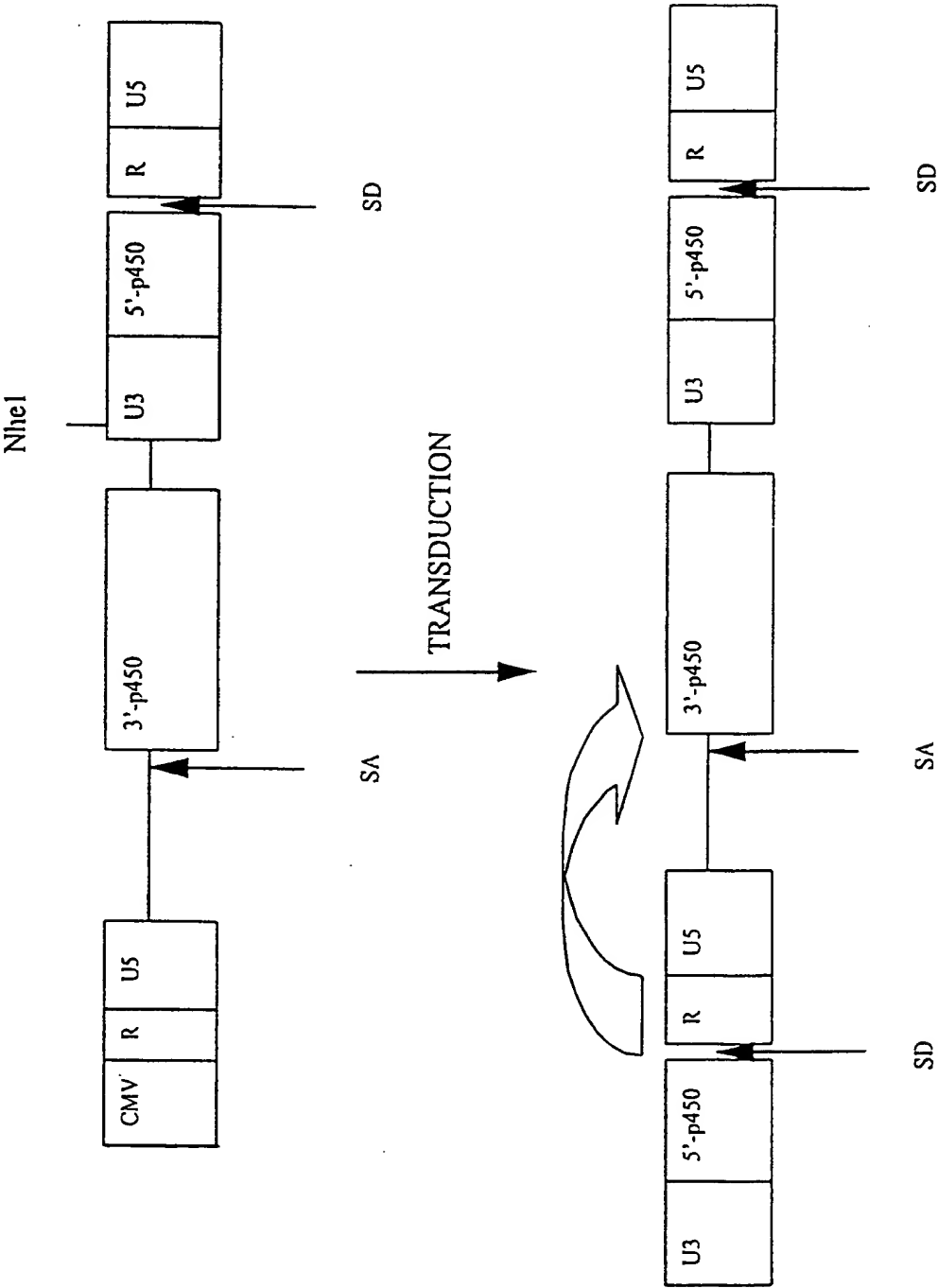
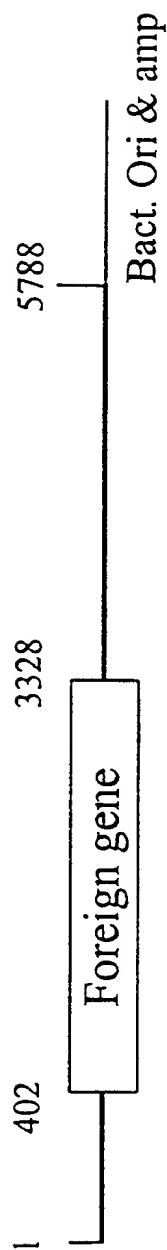


Figure 19

Transfer vector (shown linear)

Adeno nucleotides

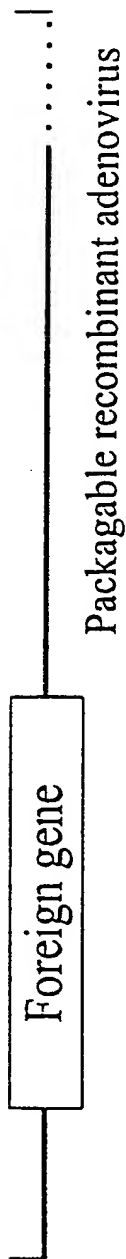


Homologous *in vivo* recombination

pJM19 (shown linear)



40 kb plasmid - too large to be packaged into nucleocapsids



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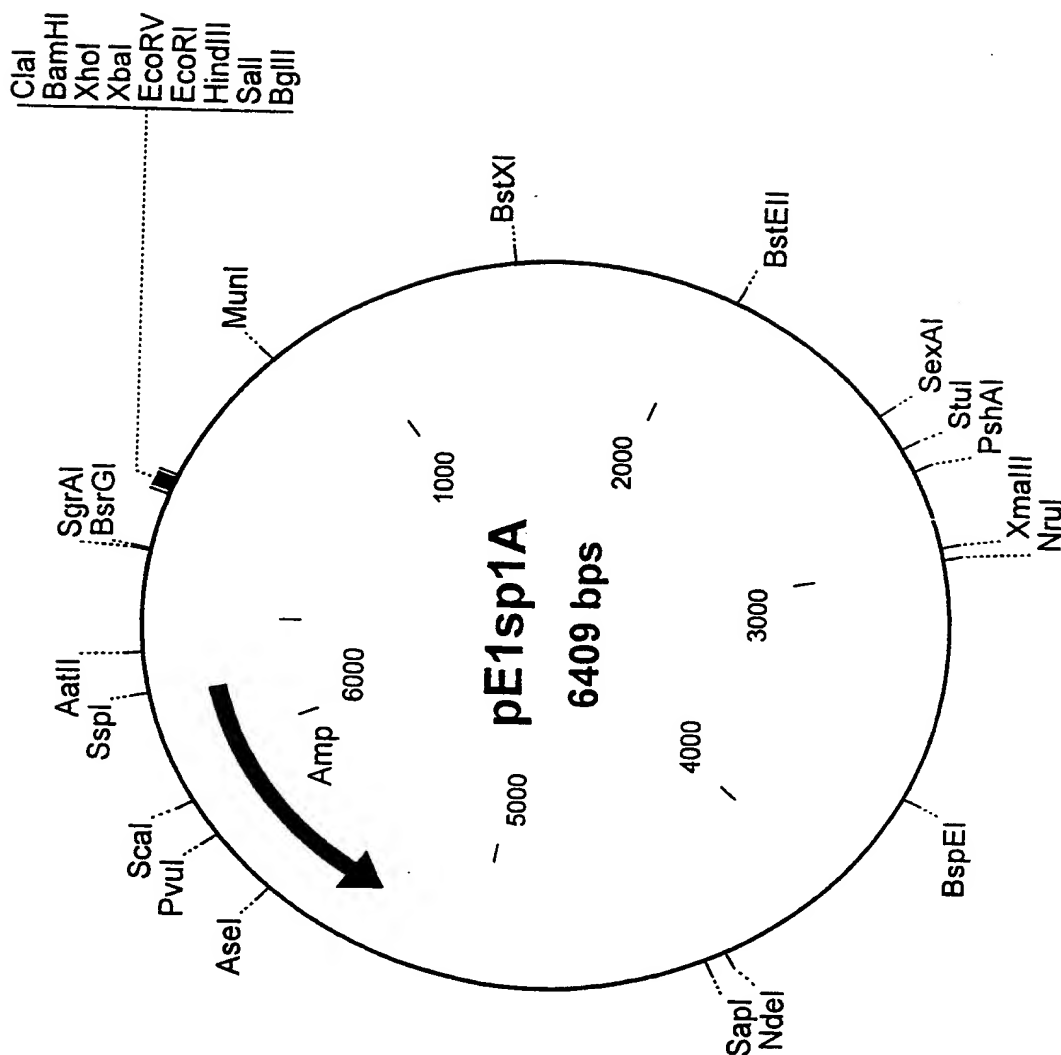


Figure 20

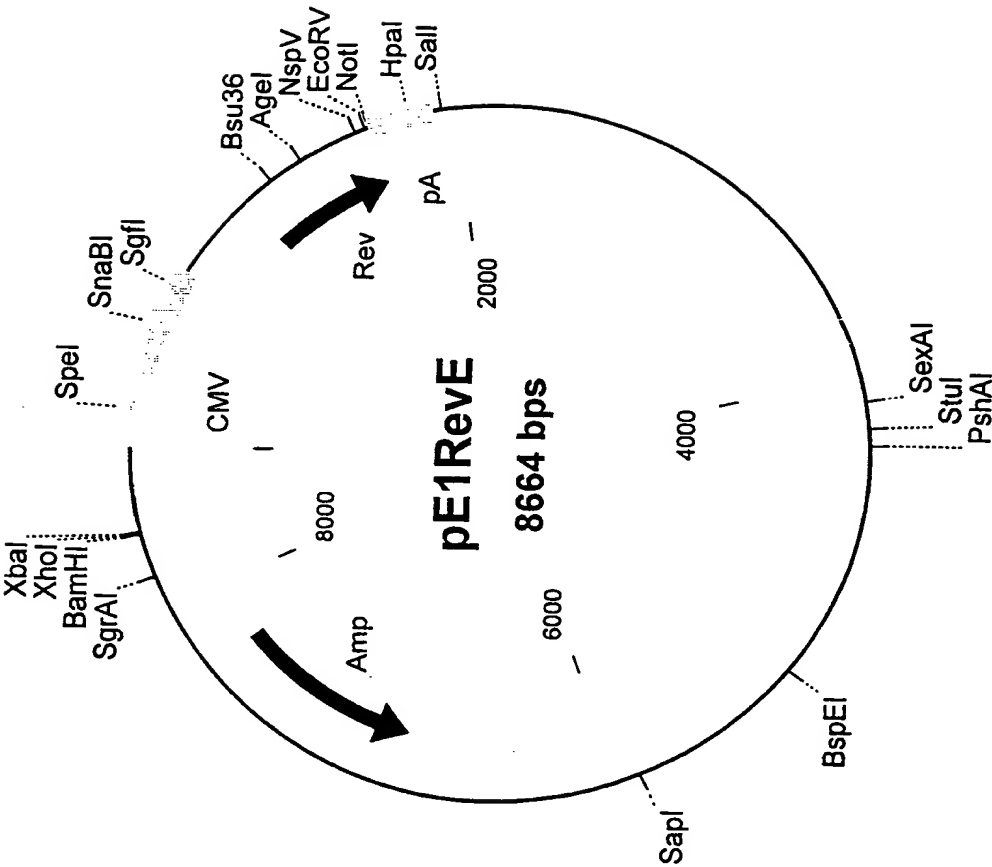


Figure 21

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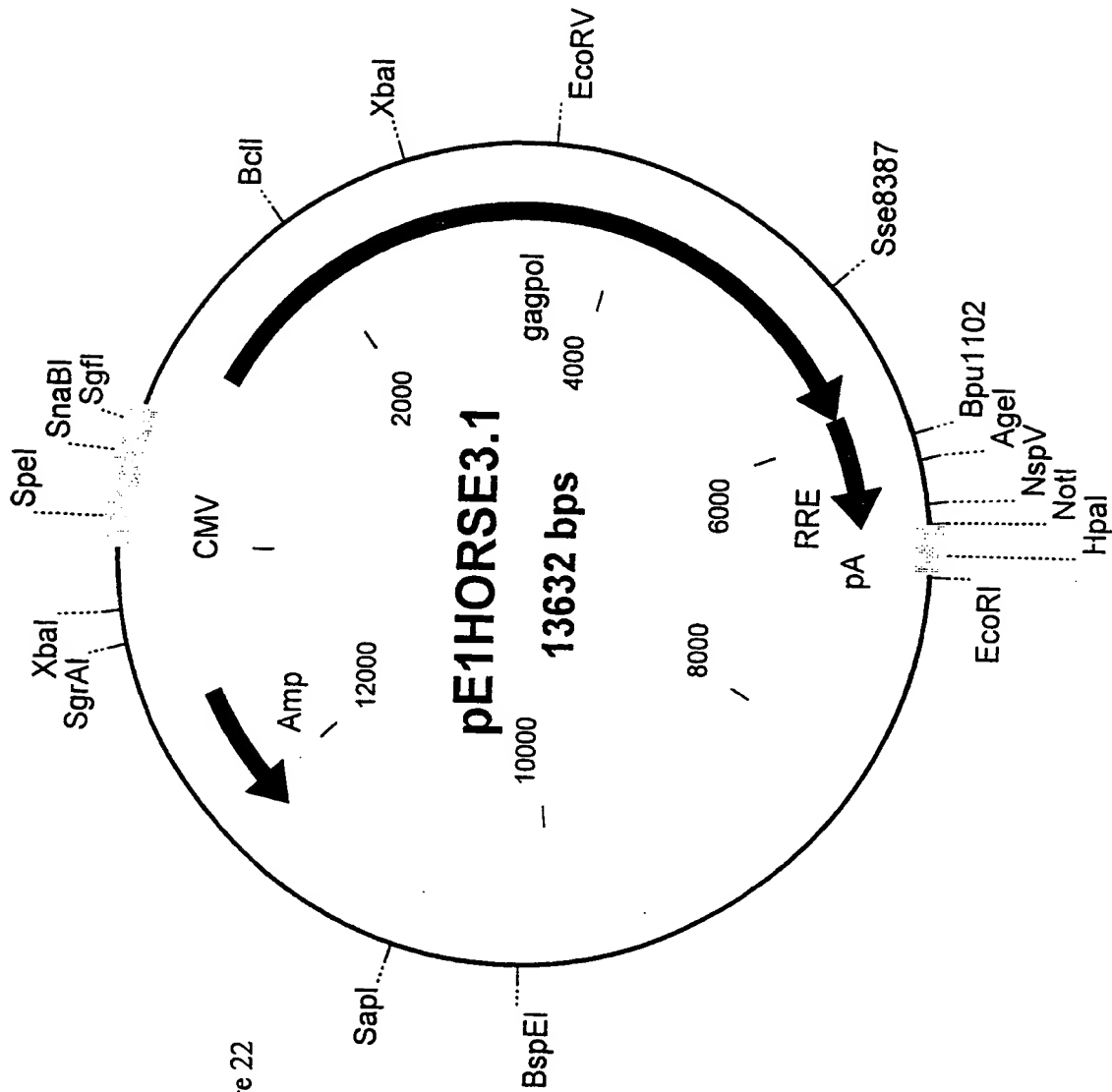


Figure 22

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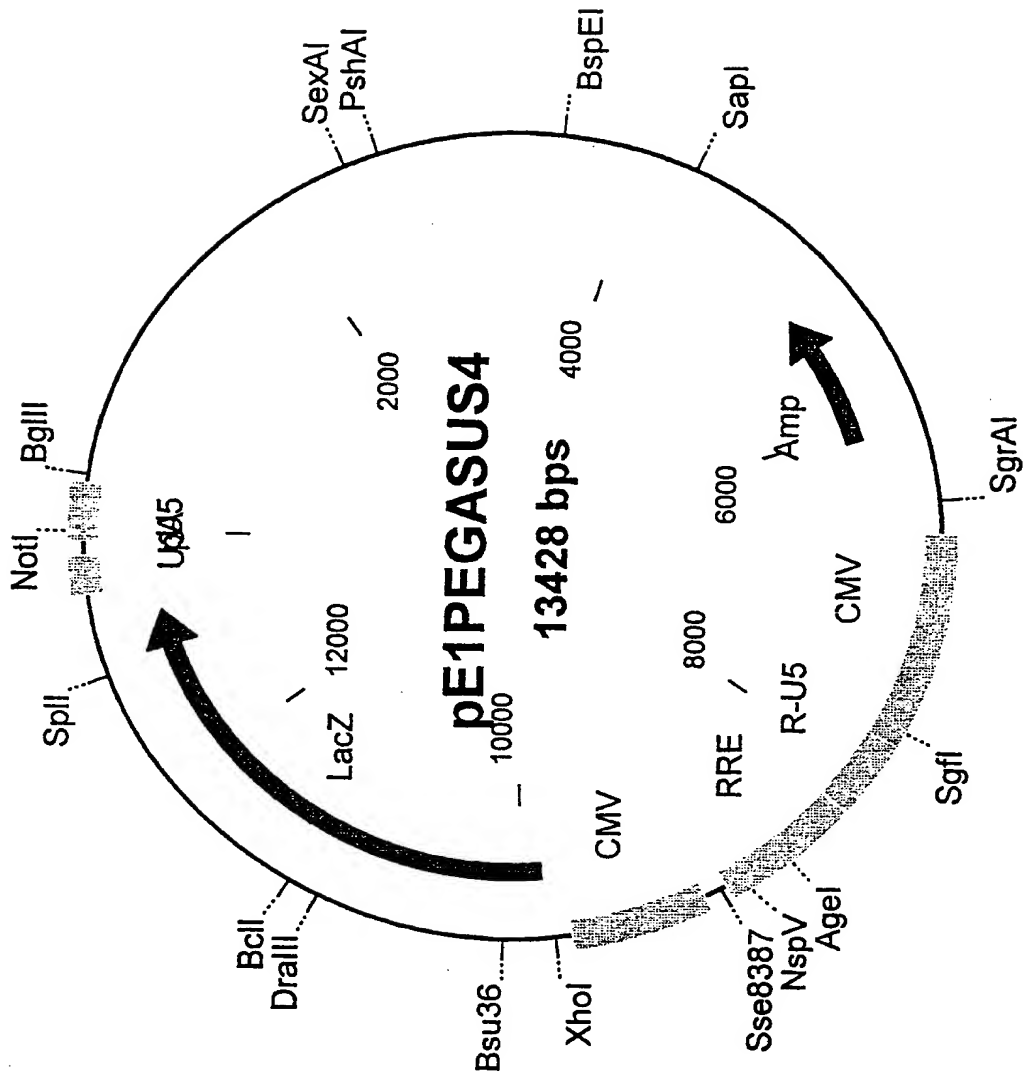


Figure 23

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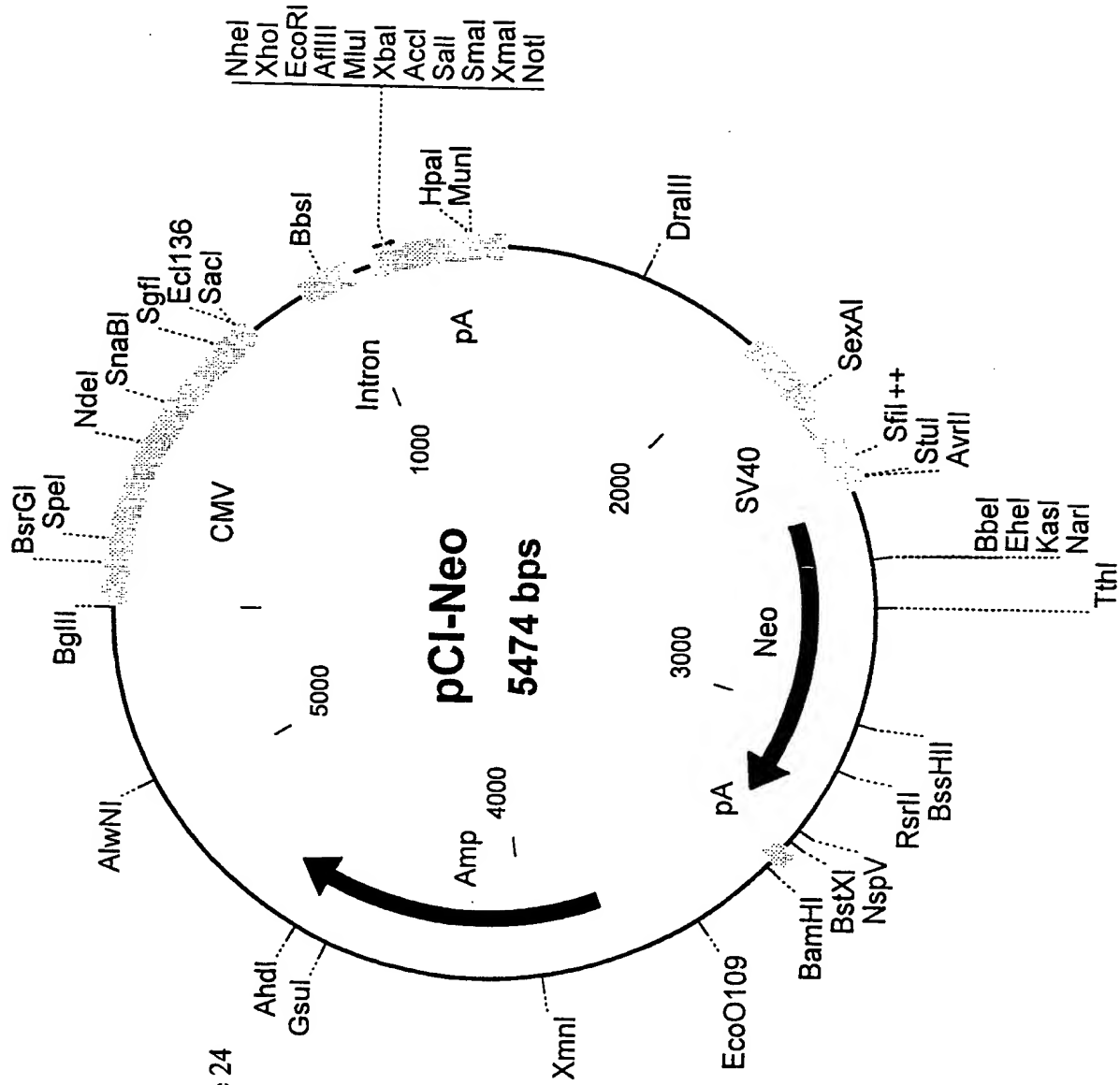


Figure 24

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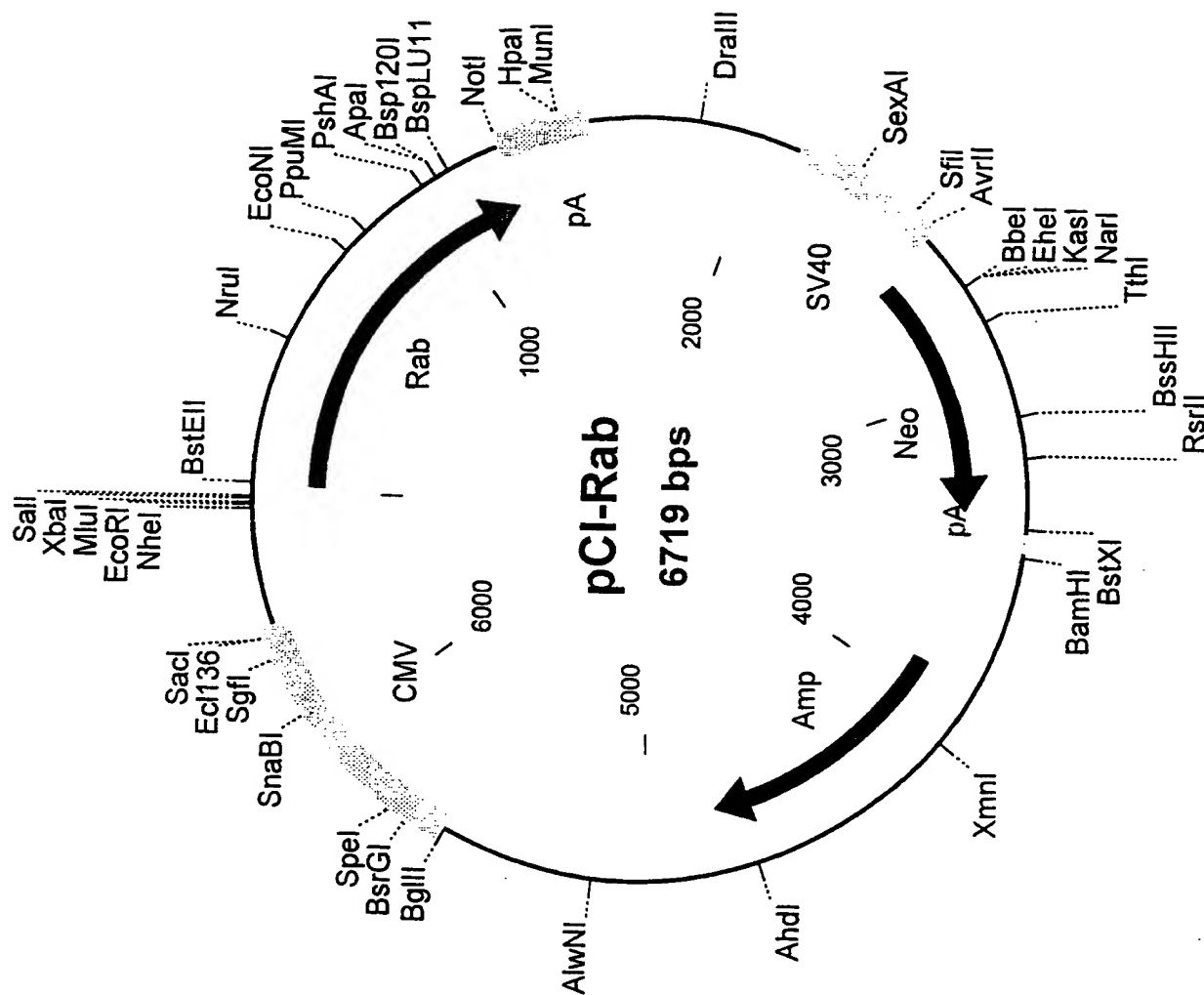


Figure 25

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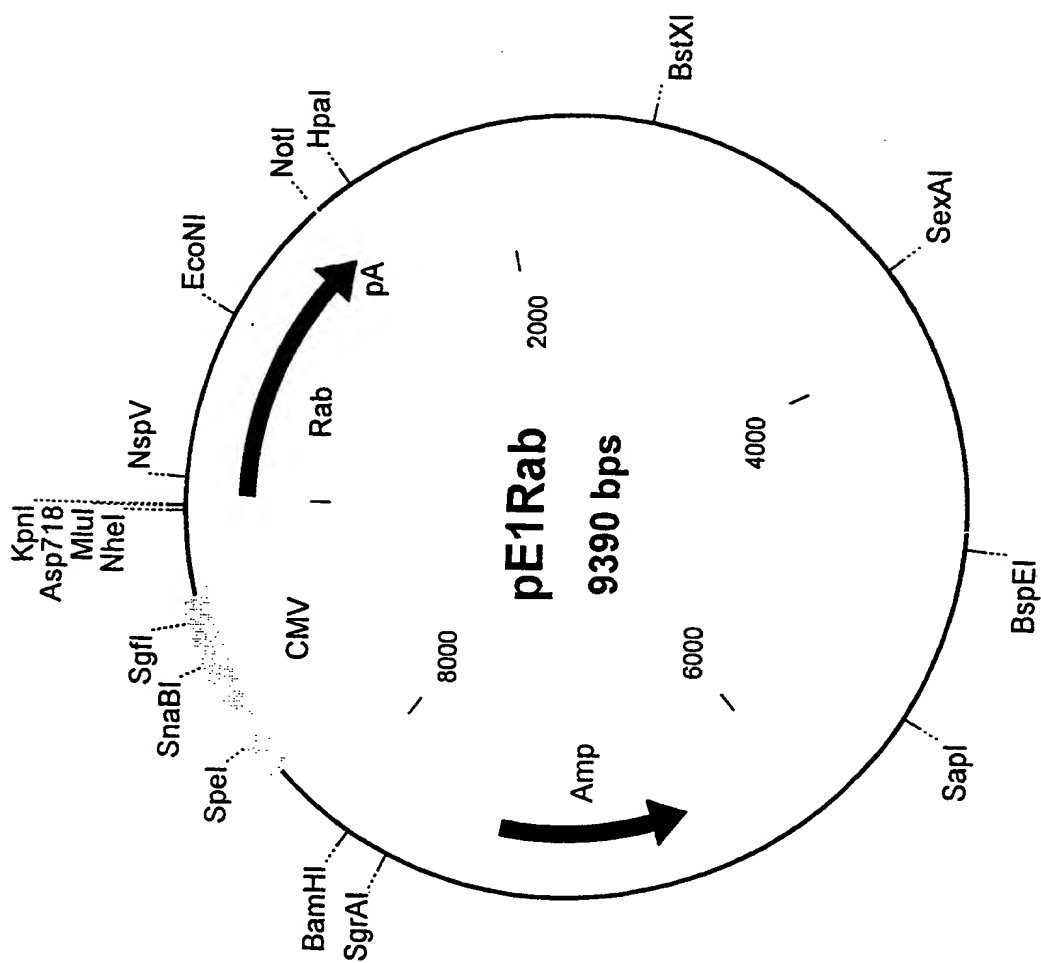


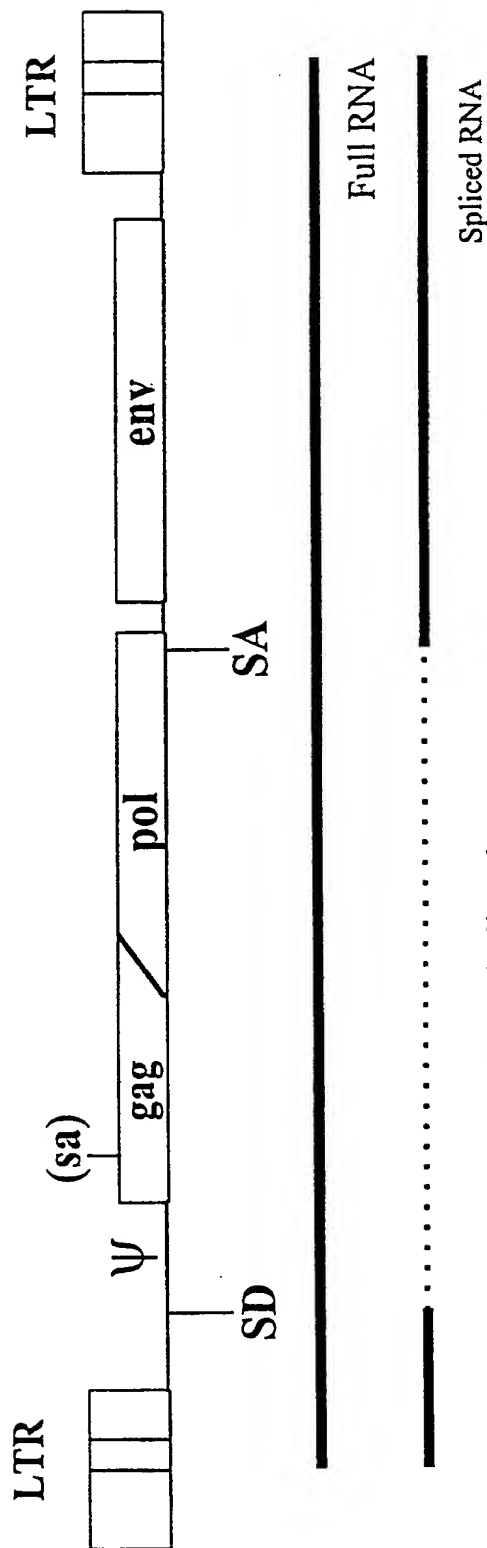
Figure 26

Figure 26: Circular plasmid map of pE1Rab (9390 bps) showing restriction sites, origin of replication, and antibiotic resistance.

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Figure 27a

A) Natural splicing configuration

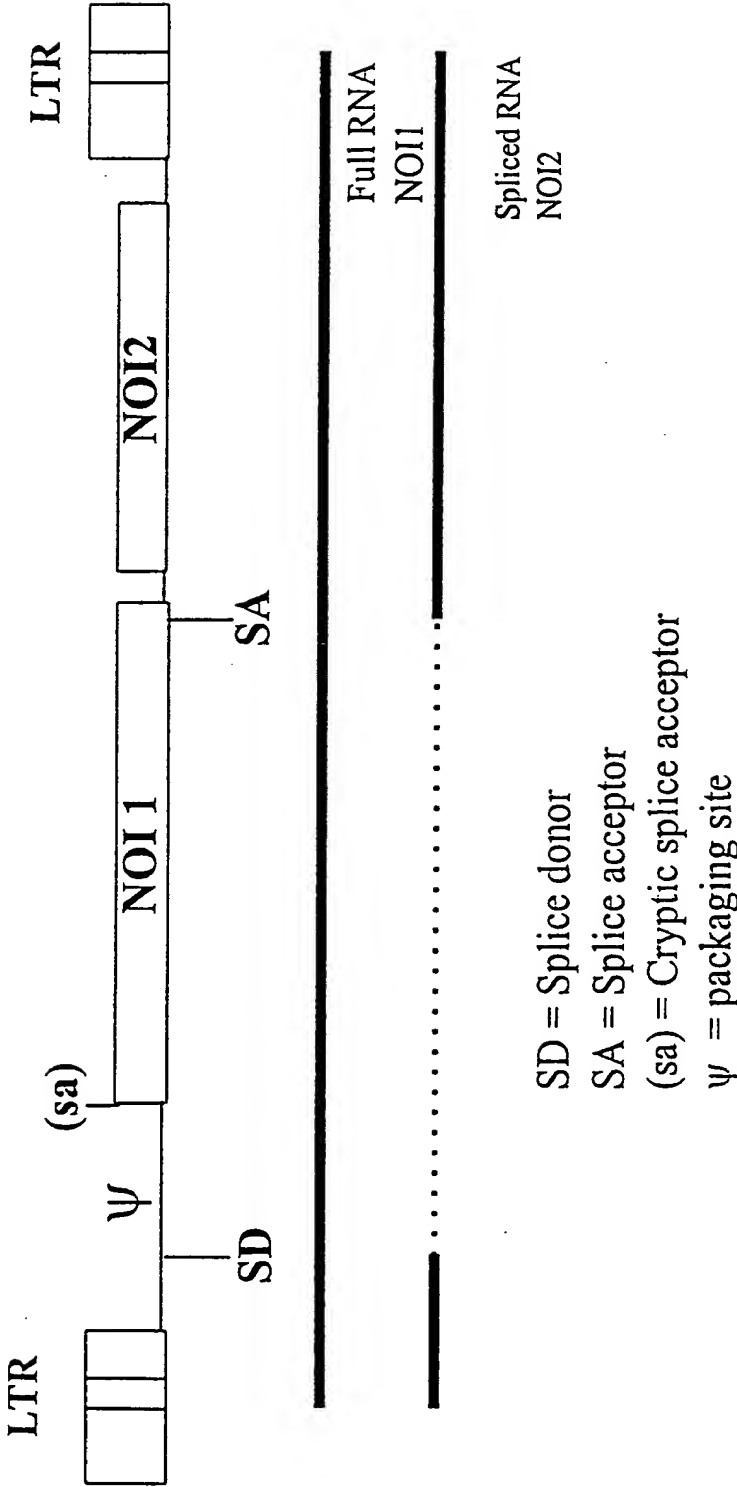


SD = Splice donor
SA = Splice acceptor
(sa) = cryptic splice acceptor
ψ = packaging site

Figure 27b

Splicing configurations in known vectors

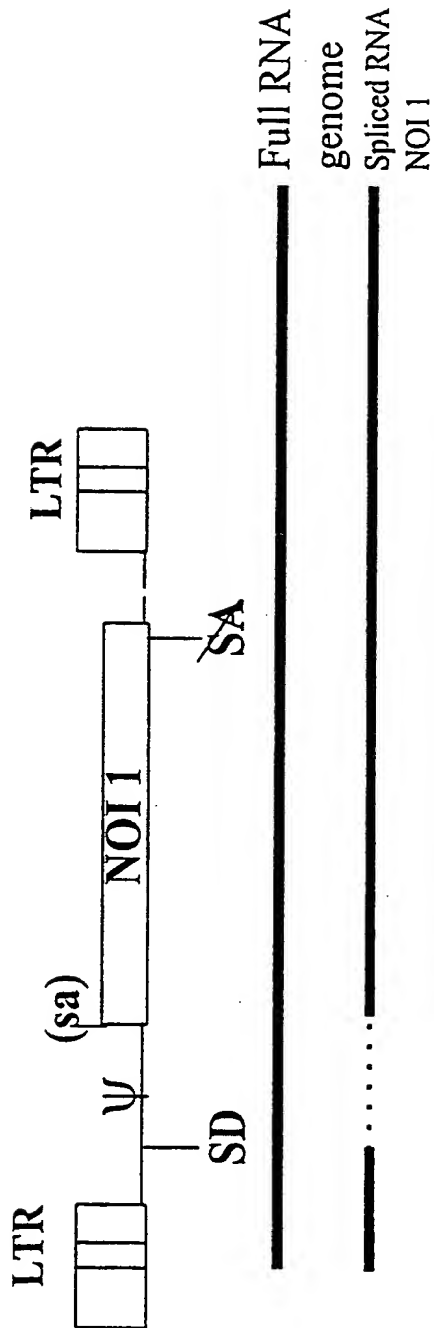
e.g. LTRSVX



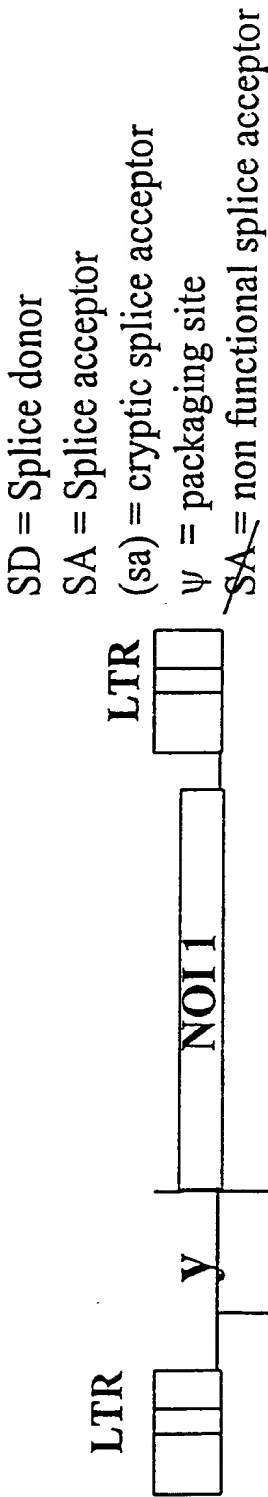
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e.g. N2

Figure 27b cont:

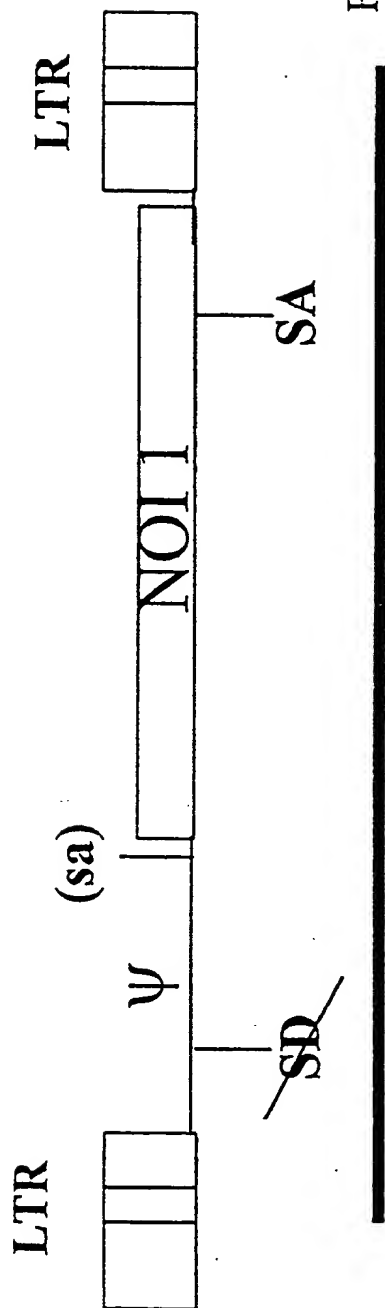


e.g. MFG



e.g pBABE

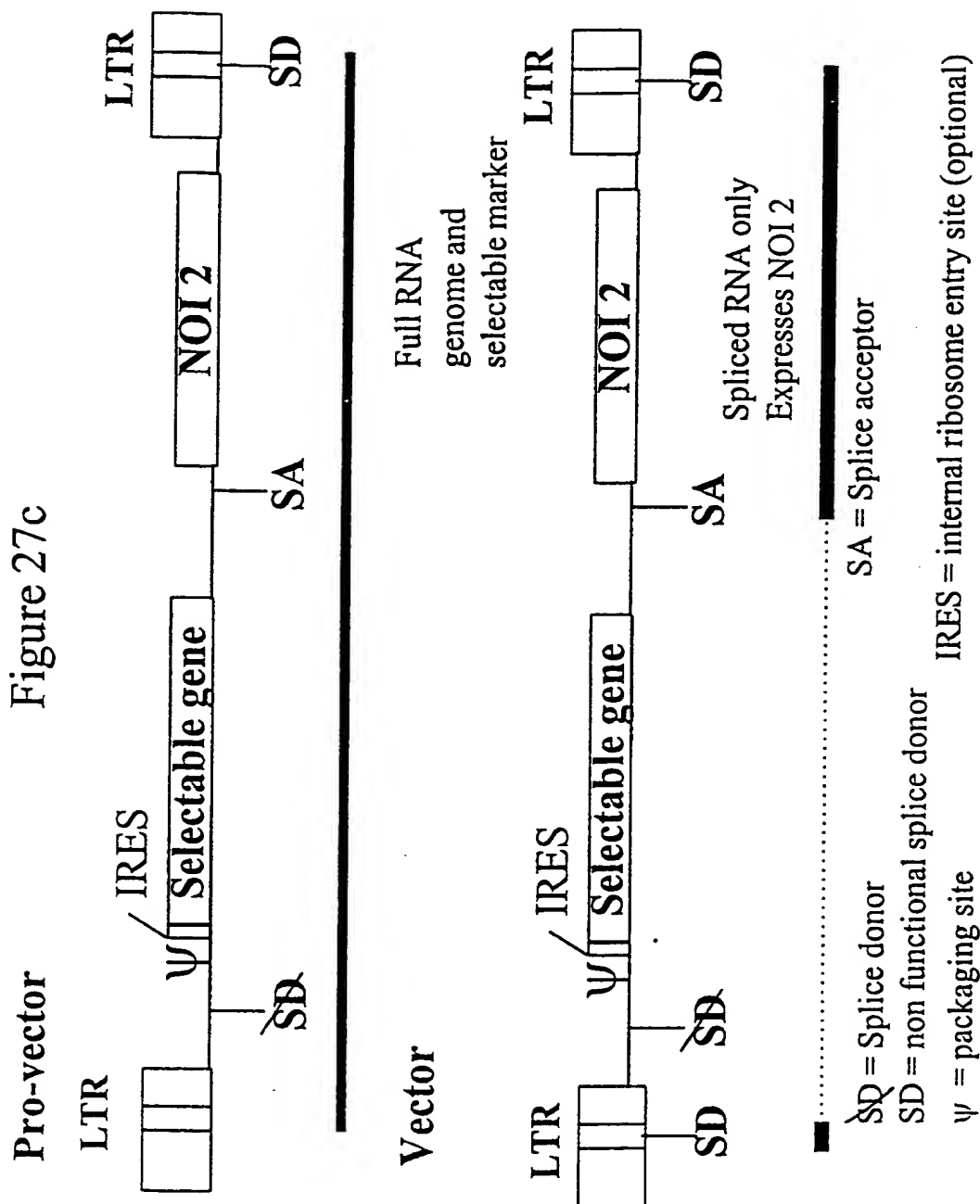
Figure 27b cont



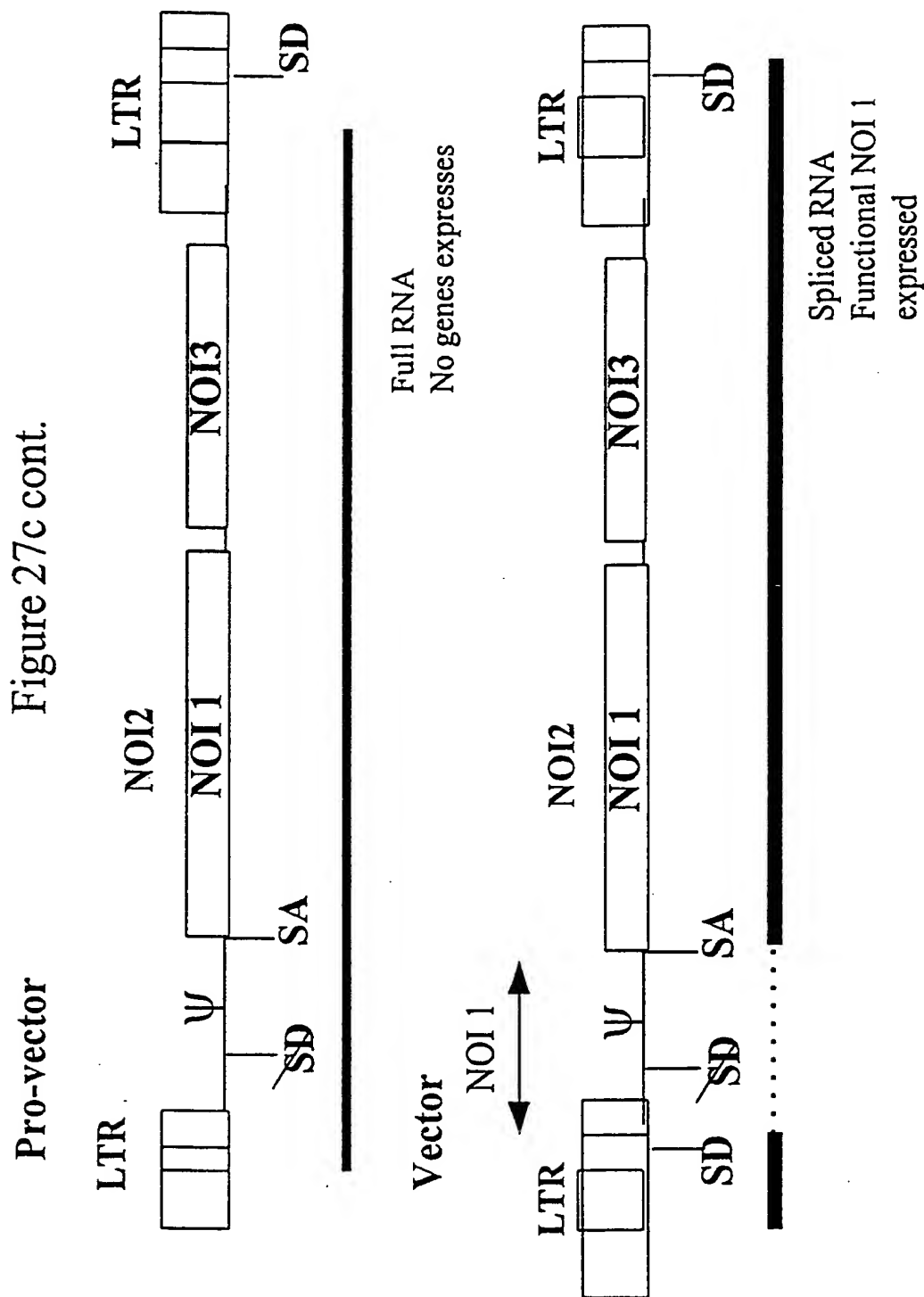
~~SD~~ = Non functional splice donor
SA = Splice acceptor
(sa) = cryptic splice acceptor
ψ = packaging site

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Figure 27c

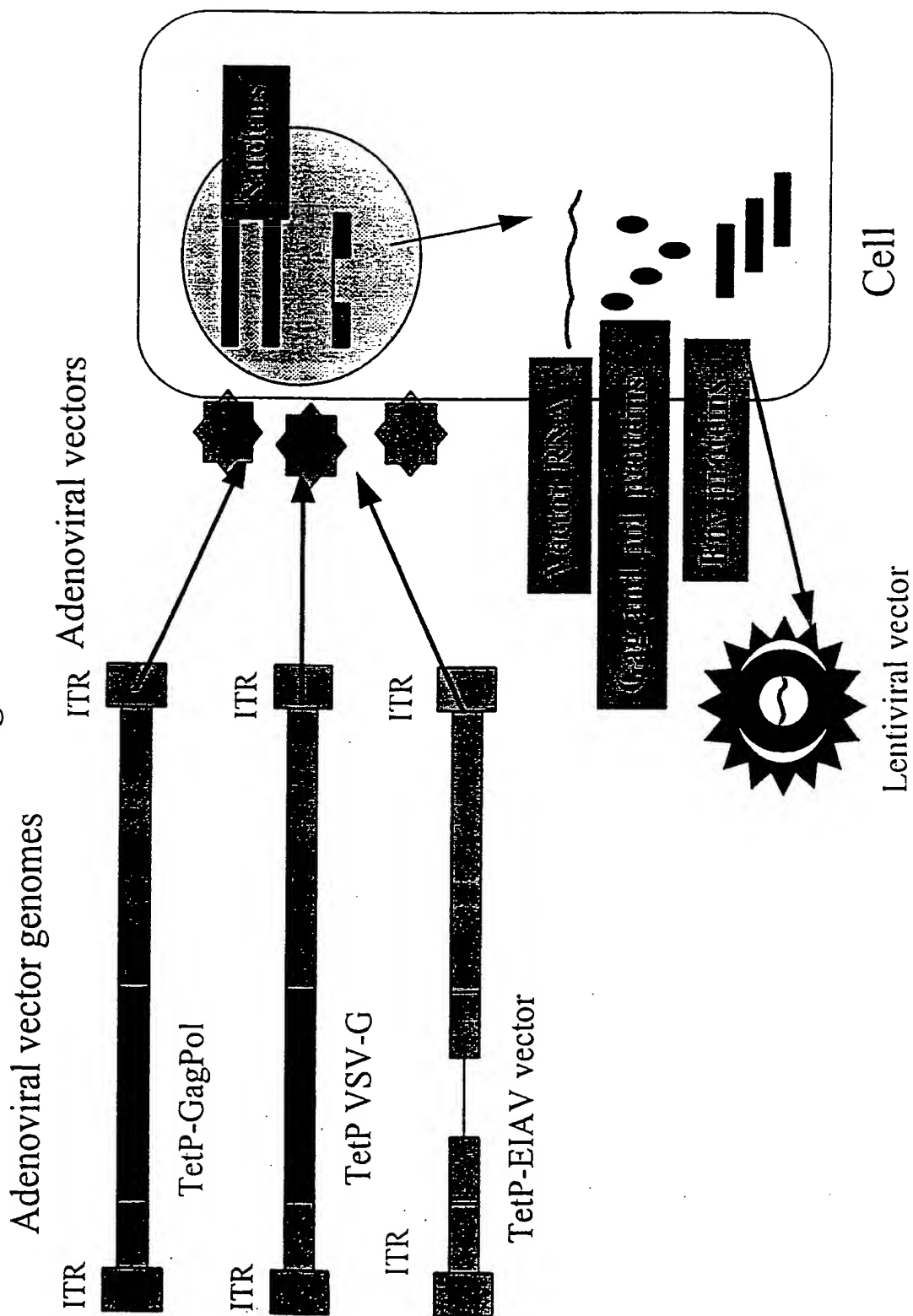


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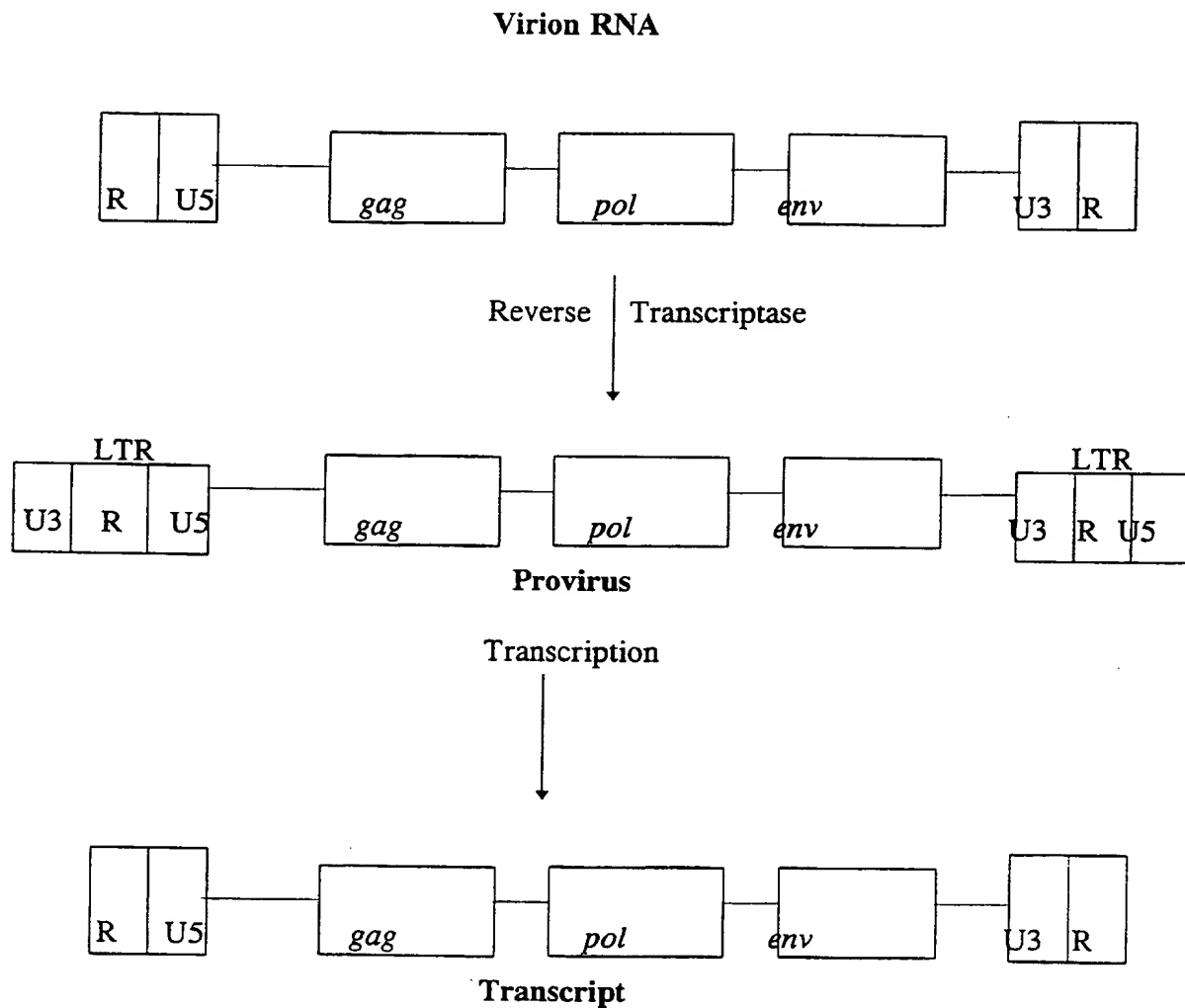
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Figure 28



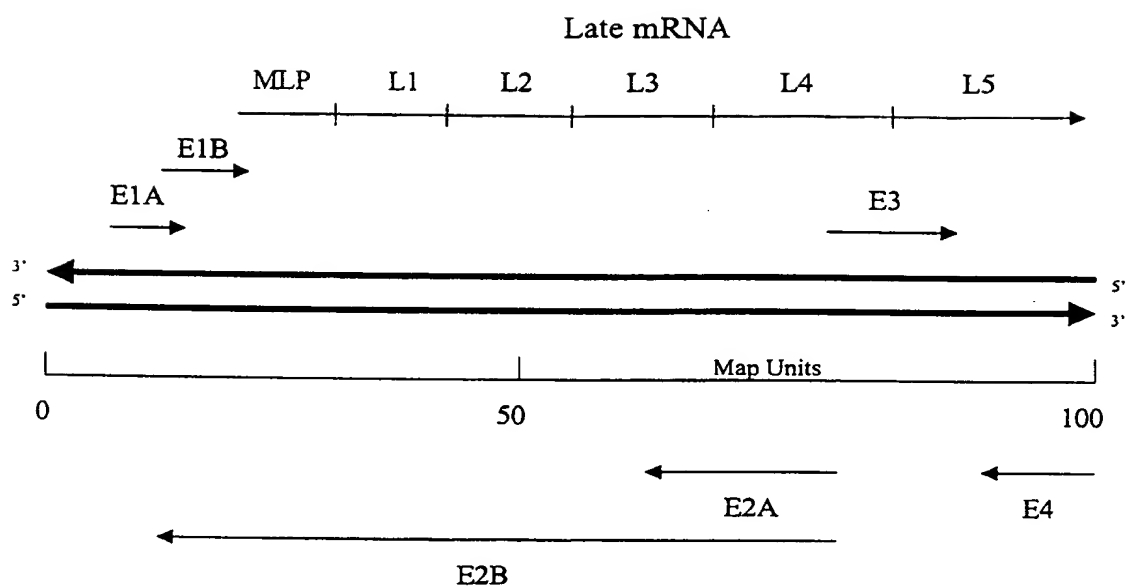
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Figure 29



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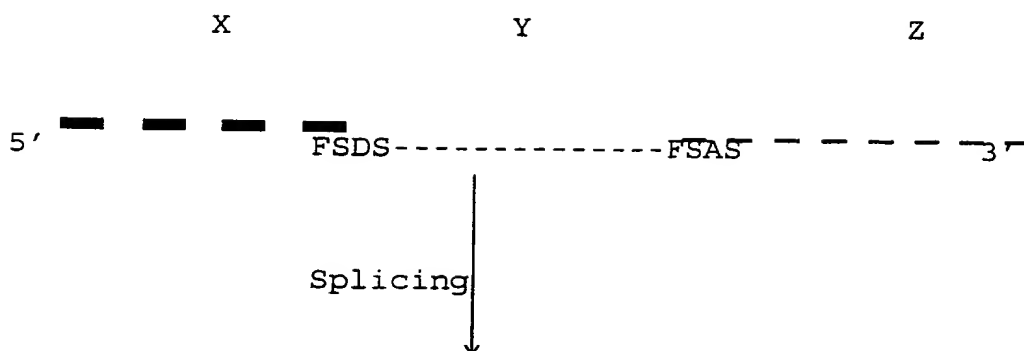
Figure 30



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Figure 31

Unspliced Form

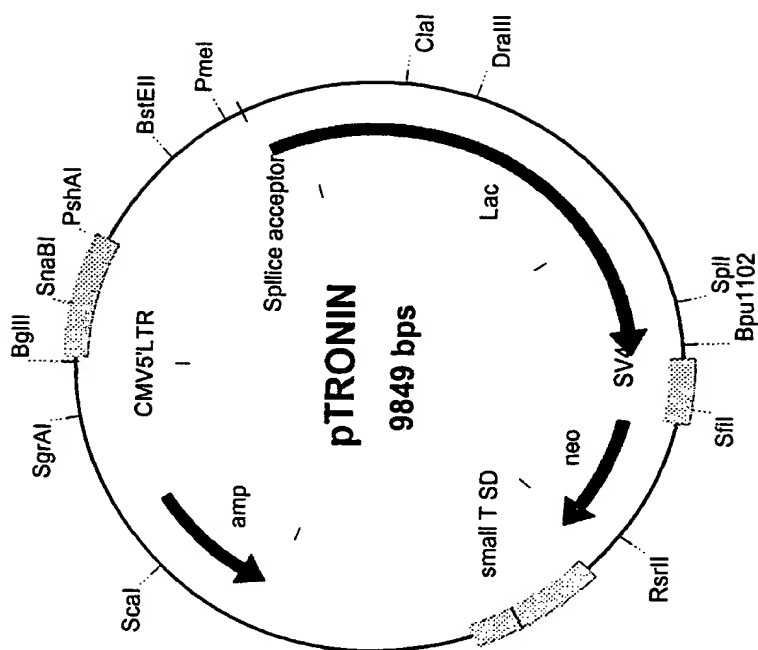


Spliced Form



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FIGURE 32



[illegible]

CGI T ACCAGAAAC TCAGAAGGT
CAC T A TAGAATACAAGCTTGA

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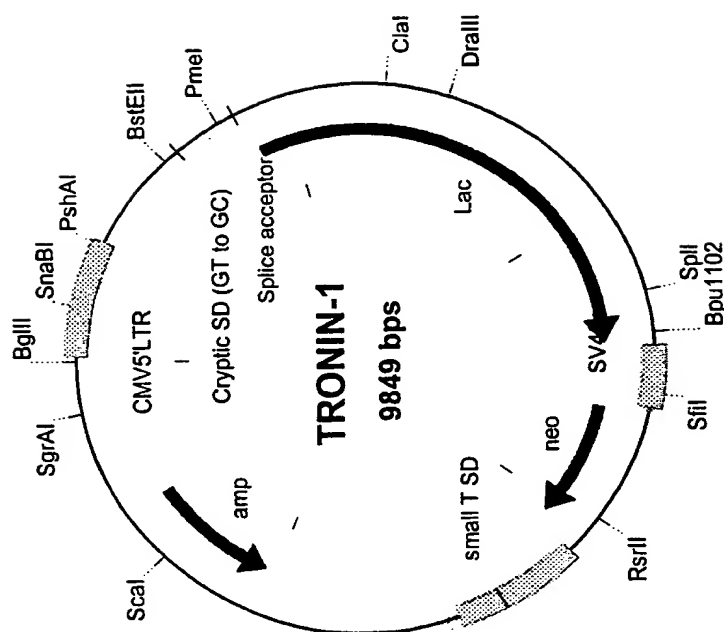
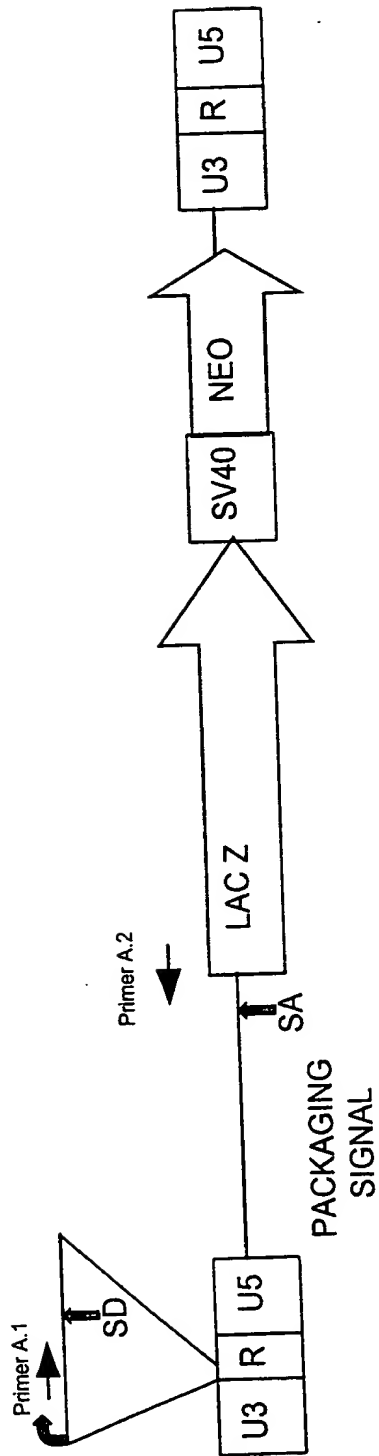


FIGURE 34

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FIGURE 35



[illegible]